

75th MORSS CD Cover Page

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Revised title: _____

Presented in (input and Bold one): **(WG_23**, CG____, Special Session ____, Poster, Demo, or Tutorial):

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Medical Course of Action Tool-Disaster (MCOAT-D)

*An introduction to the development of a
prototype casualty estimation and medical
workload planning tool.*

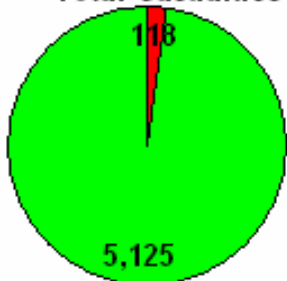
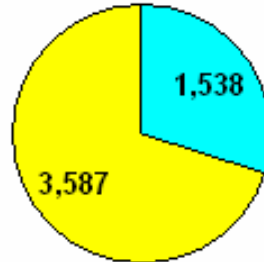


Project Overview

-- Project Synopsis --

- **Planned Phase 2 Results**
 - Functional prototype that has been tested and validated.
 - Address four natural disaster types: Hurricanes, Earthquakes, Floods and Fires.
 - Address casualty estimation and medical workload (severity and service).
- **Actual Phase 2 Result**
 - Prototype developed – not tested.
 - Prototype addresses two disaster types: Hurricanes & Earthquakes.
 - Insufficient data / results to develop a method for Floods and Fires.
 - Addresses casualty estimation and medical workload (Injury vs. Illness and limited service).

MCOAT-D Version 1

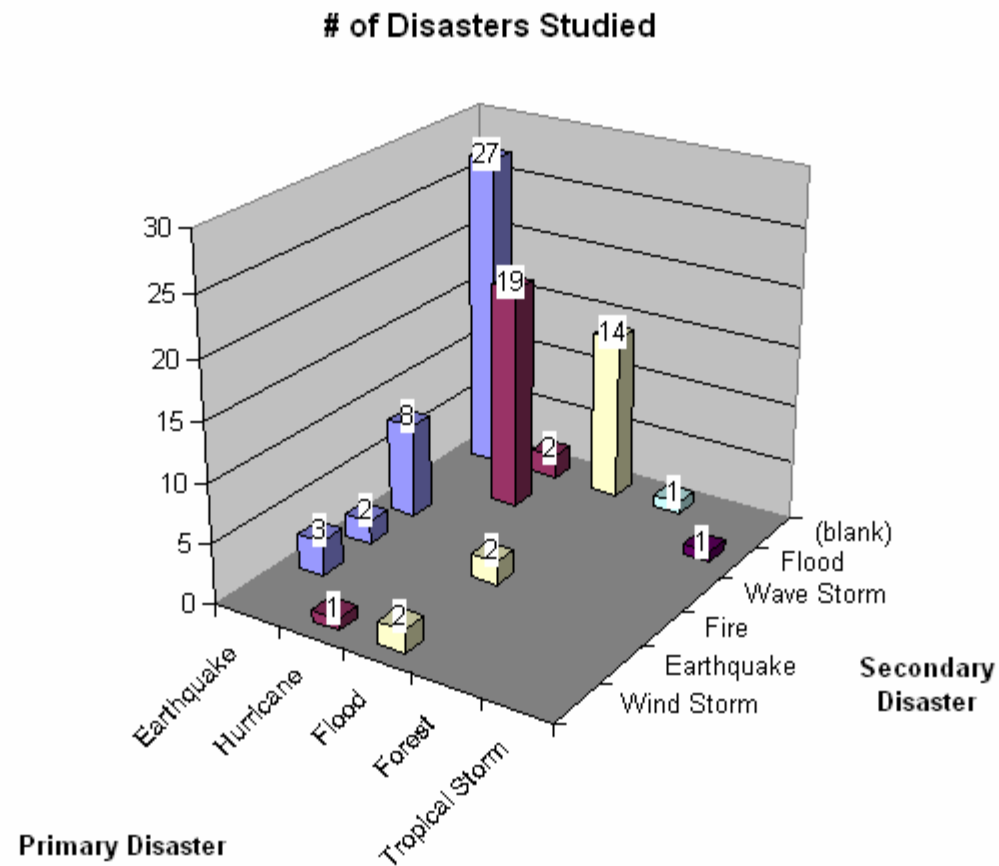
	A	B	C	D	E	F	G	H	I	J
1										
2	Population		250,000		118	5,125	Hurricane Strength			
3	Area (square miles)		250							
4	Population Density		1000							
5		0.37	0.37		1.00	1.00	Secondary Disaster			
6		1	1							
7										
8					1.00	1.00	Sec Dis Size			
9										
10										
11	Total Casualties					Casualties				
12										
13	Fatalities		118			Injury	1,538			
14	Patients		5,125			Illness	3,587			
15										
16	Total Casualties					Casualty Types				
17										
18										
19										
20										
21										
22										
23										
24										
25										
26										
27										

- Prototype version 1 developed in 4 months
- Hurricane and Earthquake estimation
- Fatalities and Patients

Headlines 1 of 2

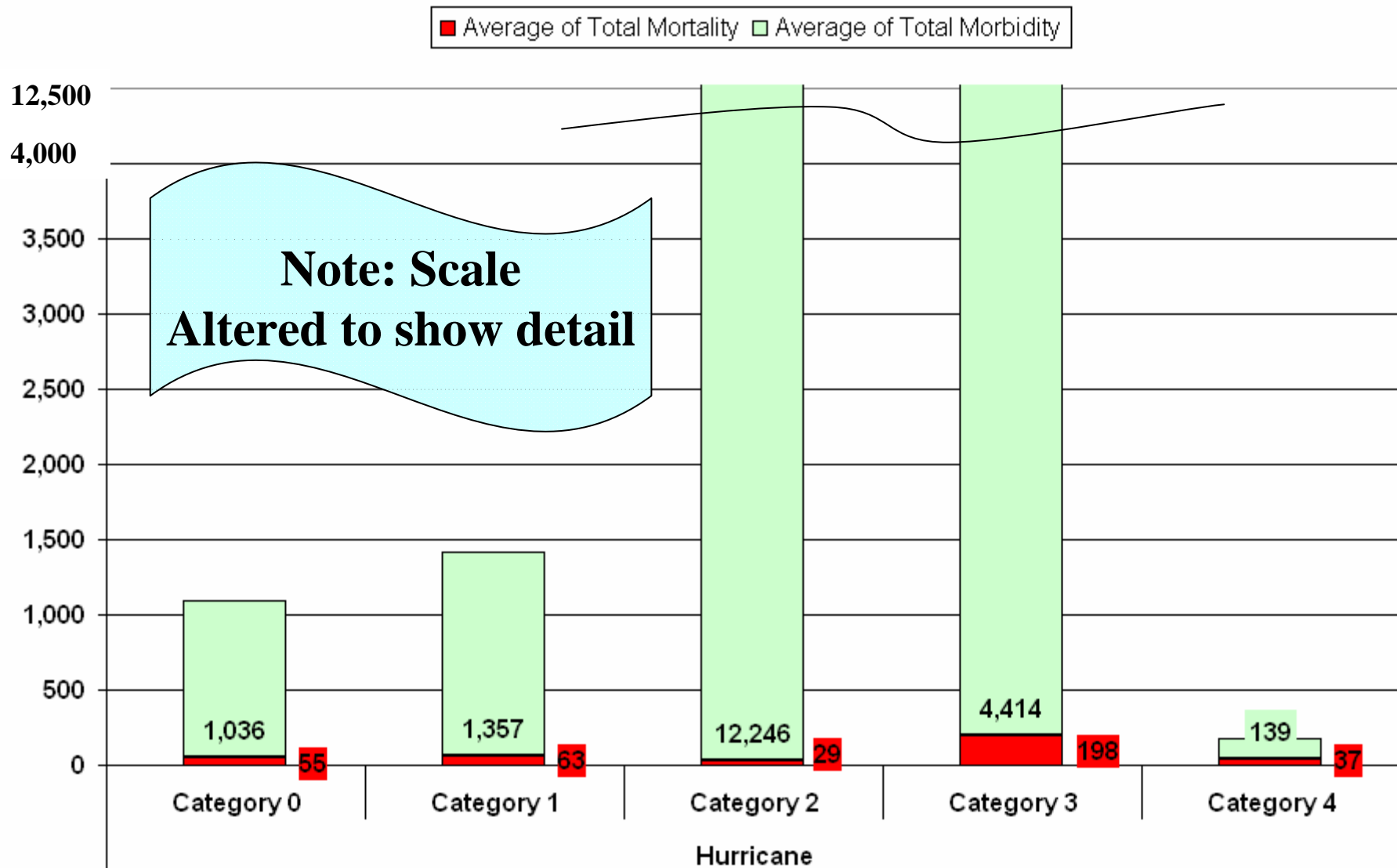
- 82 Disasters entered into Excel[®] spreadsheet (54 last IPR)
 - Flood = 18 (24)
 - Earthquake = 40 (16)
 - Hurricane = 23 (13)
 - Fire = 1 (1)
- Access[®] database under development for data entry and analysis.
- 123 documents archived in SharePoint[®] (123 last IPR).

Headlines 2 of 2



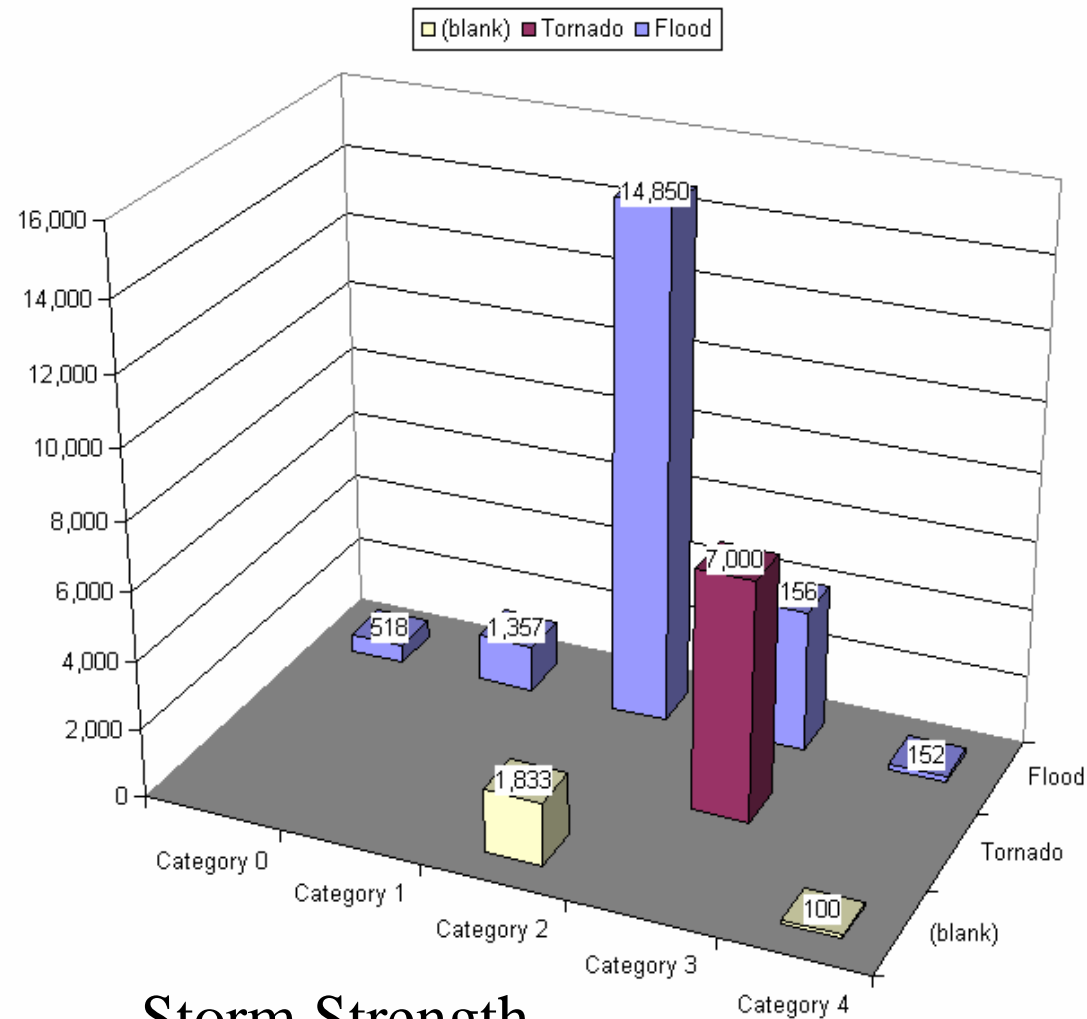
	(blank)	Flood	Wave Storm	Fire	Earthquake	Wind Storm
Earthquake	27		8	2	3	
Hurricane	2	19				1
Flood	14			2		2
Forest	1					
Tropical Storm		1				

MCOAT – D Observations and Insights



Hurricane Morbidity

Floods as
secondary disaster:
driving factor for
Category 2
Morbidity figures

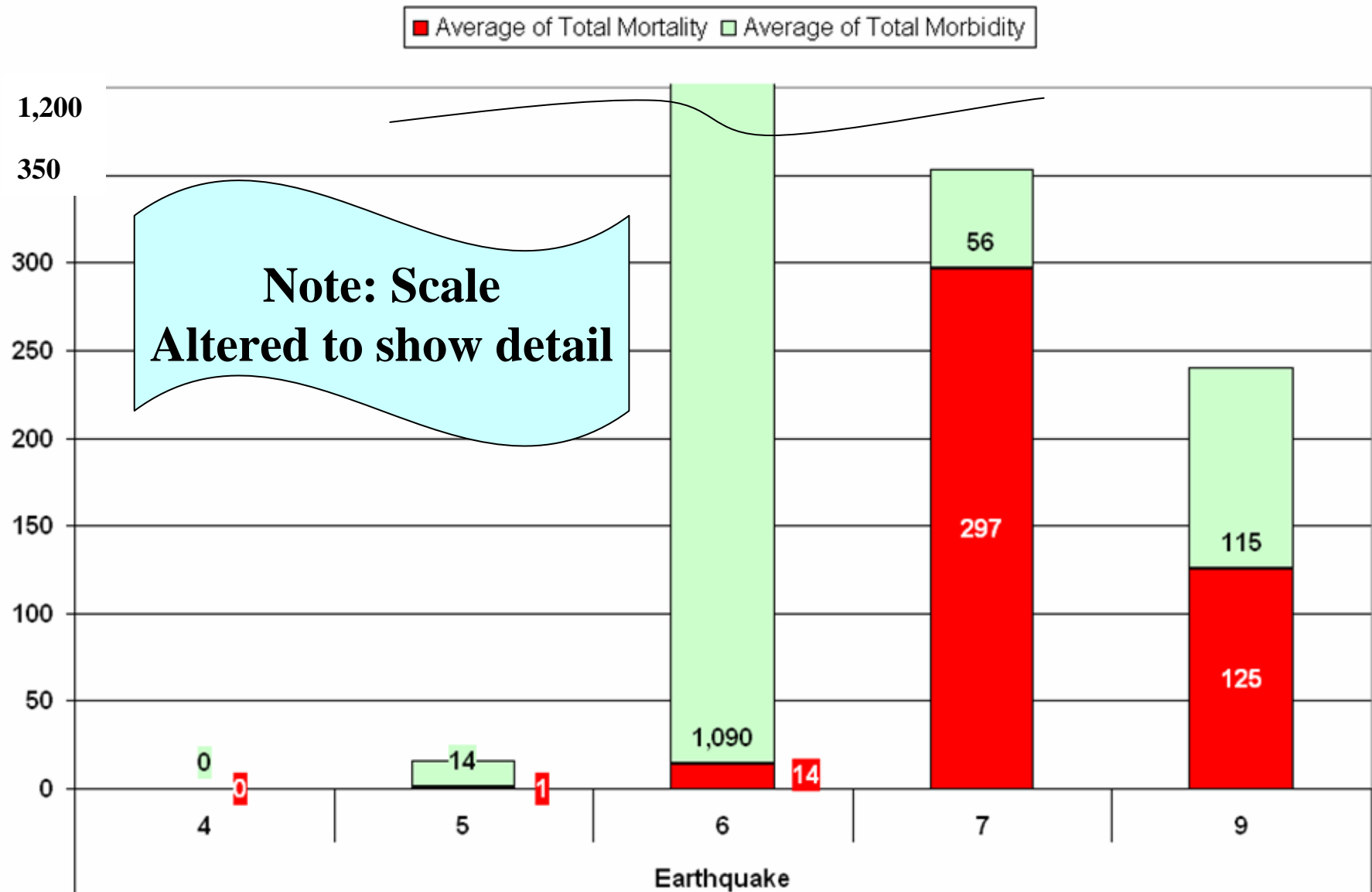


Average
number of
patients per
event.
Primary data
source CDC
MMW
reports.

Secondary
Disaster

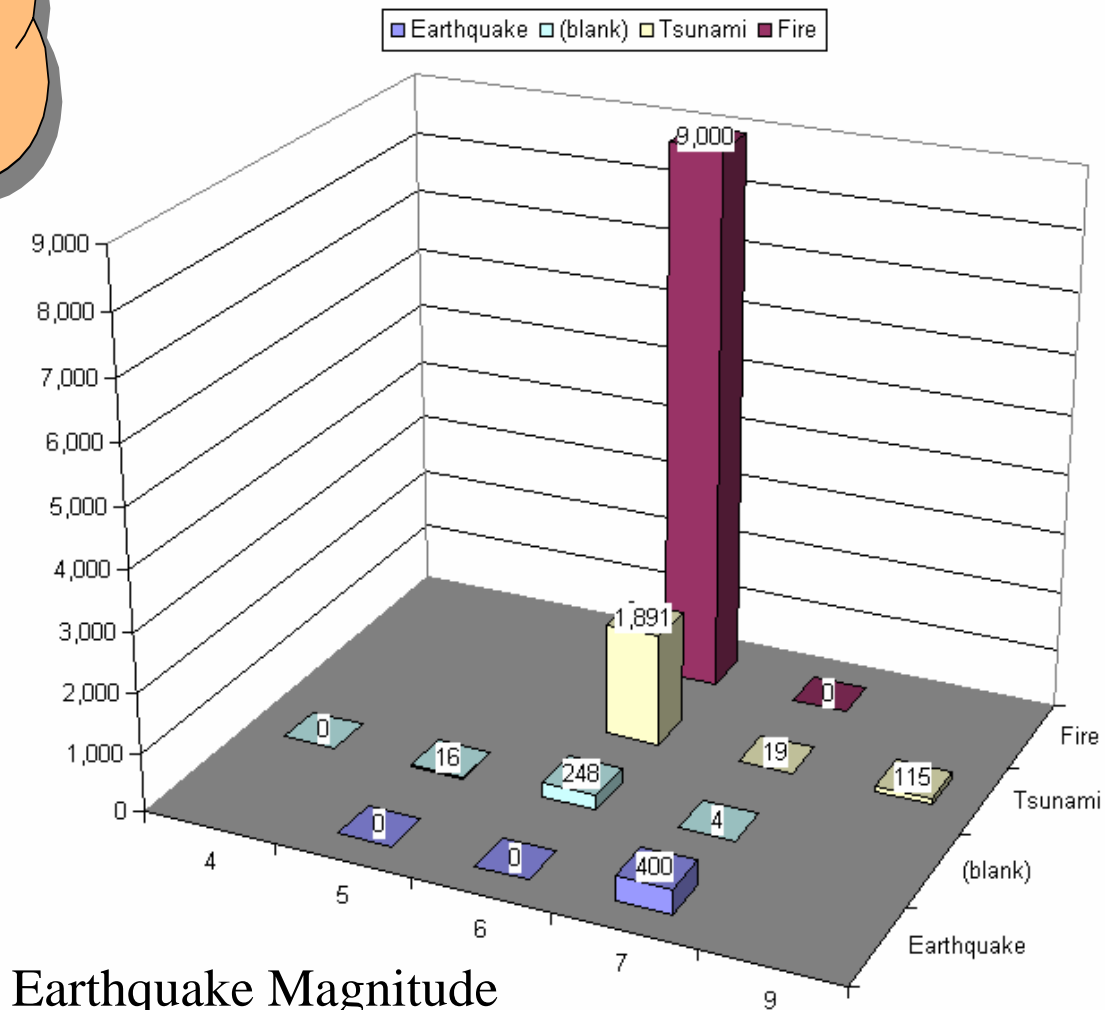
Storm Strength

MCOAT – D Observations and Insights, cont.



Earthquake Morbidity

Fires as secondary disaster: driving factor for Magnitude 6+ Morbidity figures



Average number of patients per event. Primary data source CDC MMW reports.

Secondary Disaster

MCOAT – D Correlation Coefficients

	Hurricanes	Cat 3 Hurricanes	Earthquakes	M 6 Earthquake
Pop Density to Morbidity	.32	.73	.66	.94
Pop Density to Mortality	.66	.71	.66	.93
Category to Morbidity	.24		-.05	
Category to Mortality	.39		.27	

$$\text{Correl}(X,Y) = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

where x and y are the sample means AVERAGE(array1) and AVERAGE(array2).